# The impact of war on mental health: lest we forget

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The often-unconscious and enduring impact of war is one of the driving forces of history. Yet these terrible costs and the lessons learned by psychiatry tend to be forgotten (1). At a time when many nations are remembering the legacy of World War I, the greatest military conflagration in history, it is timely to reflect on what has been learnt about the impacts of war on mental health.

Ironically, it is only since the inclusion of post-traumatic stress disorder (PTSD) in the DSM-III in 1980 (2) that the field of traumatic stress has blossomed and been subsequently underpinned by a major body of neuroscience and clinical research.

Despite the slow development of interest into the long-term consequences of the traumatic stress of war, many of the developments in mental health care in the 20th century emerged from the innovations demanded by the need to deal more effectively with the flood of mental casualties amongst the combatants of World Wars I and II. The model of community psychiatry was adapted from the model of forward psychiatry developed by the military to deal with acute combat stress reactions; this model was underpinned by the principles of the provision of early treatment close to the battle front with the expectancy of recovery and return to service (1). Crisis intervention, group therapy and therapeutic communities were innovations that evolved out of the military medical corps (1).

However, psychiatrists who served in the military were often conflicted by powerful and potentially competing value systems concerning whether their primary responsibility was to the soldier or to the war effort (3). The prevailing attitudes would tend to indicate that individuals' interests often lost out – the veteran who broke down in battle was generally stigmatized. The diagnoses promulgated by the profession, such as compensation neurosis, *lack of moral fibre* and inadequate personality reflected how the problem was seen to be caused by moral weakness and vulnerability (4). In this characterization, the causal role of the horrors of combat were minimized by psychiatry, in contrast to compensation seeking and vulnerability.

## THE IMPACT OF THE VIETNAM WAR

It was in the ferment of the protests against the Vietnam War in the U.S. that veterans, partly as a consequence of their political activism, were able to lobby for an independently conducted study of the impact of their war service. The National Vietnam Veterans' Readjustment Study was a turning point in defining the psychological costs of war, with 18.7% having a lifetime history of PTSD (5). These costs of traumatic war stress extended beyond PTSD, to the increased risk for depression, personality disorders, suicide, and alcohol abuse (6).

The Vietnam veterans' battle to gain recognition for their psychological injuries fostered an acceptance of the diagnosis of PTSD and the development of the field of traumatic stress studies. This knowledge, in turn, led to recognition of the plight of the psychological welfare of civilian casualties of war internationally, such as refugees and victims of torture, and their special needs for care.

Activist psychiatrists in the Vietnam veterans' movement also documented the impact of other horrors of war, including the bombing of Hiroshima and the brain washing of prisoners of war (7). This work contributed to the medical profession's important role in the antinuclear movement.

## THE CYCLES OF VIOLENCE OF WAR

There has been an increasing awareness of the moral injury suffered by combatants and the particular costs of the act of killing on mental health, which involves a fundamental violation of an inbuilt prohibition, overridden by military training (8). The violence associated with PTSD impacts on veterans' families, as well as on the broader society (9). Tragically, it is these psychological costs that can lead to cycles of violence, both within the communities that have been at war and between nations seeking revenge and reparation.

These enduring effects of violence have become of particular concern with the current conflicts in the Middle East and the associated terrorist movements that seek to lure young men and women to their violent cause. Psychiatry has a responsibility to contribute to more sophisticated understandings of these cycles of hatred and how to stop violence propagating itself. These destabilizing consequences of war lead to major humanitarian crises and enduring psychological legacies that contribute to poverty in nations such as Rwanda and Somalia.

## EPIDEMIOLOGICAL STUDIES OF WAR

In the last three decades, there has been a major research effort to understand the broad costs of military service in combat, often in response to lobbying by the veteran community in Western nations. Fears about the health consequences of exposures to chemical, nuclear and biological weapons, for example after the first Persian Gulf War, have been

significant drivers to these research programs (10). However, the consistent finding has been the increased rates of psychiatric disorder due to combat exposure. These long-term studies of veterans have also demonstrated that there is a frequent pattern of delayed onset PTSD, confirming the reality of the prolonged risk arising from combat exposure (11).

More recently, a debate has emerged about the apparent differences in the prevalence of psychiatric disorder in the U.S. and U.K. veterans from recent wars in the Middle East (12). This controversy has arisen, in part, because of the different methodologies used in studying veterans. However, when self-reported combat exposure is taken into account, most of the differences in the reported prevalence of PTSD between the U.S. and U.K. forces no longer exist (12).

The long-term cost of combat was examined over a 43 year period of pension entitlement records of an entire cohort of 60,228 Australian Vietnam veterans, documenting that 47.9% had accepted claims for a mental health condition (13). The persistent risk of emerging disorder has also been demonstrated in a longitudinal study of Israeli combat veterans, which also showed the benefits of frontline treatment for combat stress reactions (11). These findings suggest that studies reporting mental health outcomes relatively soon after deployment are likely to underestimate the total cost of war.

A further challenge in interpreting the impact of combat exposure on rates of psychiatric disorder relates to the "healthy warrior" effect (14). This phenomenon has been shown in representative samples, where those who deploy are more resilient and psychologically healthy prior to deploying than those who do not deploy (14). These differences make epidemiological comparisons of disorder prevalence between deployed and non-deployed groups and the community more difficult to interpret, as these background differences hide the detrimental effects of combat. The demonstrated gradient between the intensity and duration of combat exposure and its adverse mental health impacts is the critical issue (5).

## THE SOMATIC AND BIOLOGICAL CONSEQUENCES OF COMBAT EXPOSURE

Post-deployment studies have highlighted the importance of the somatic manifestations of psychological distress. Veterans often fear that their physical symptoms are indicative of exposure to environmental toxins, and are reluctant to accept that they relate to psychological trauma of war. Combat-related PTSD has been found to increase the risk of a range of chronic diseases (15). Importantly, there appears to be both a direct effect of the stress of combat exposure on the presence of chronic disease and mortality, as well as this being amplified by the presence of PTSD (16). There has also been considerable interest in the morbidity of mild traumatic brain injury, both as a separate problem as well as a risk factor for PTSD (17).

Prospective designs have been used to investigate the neurobiological effects of combat and have shown how perceived combat stress modifies amygdala coupling with the insular and dorsal anterior cingulate circuits, which are related to fear reactivity and somatic self-awareness (18). Abnormalities of the hypothalamic-pituitary-adrenal (HPA) axis have also been examined, with studies demonstrating that higher numbers of glucocorticoid receptors pre-deployment predict the risk of developing PTSD symptoms (18). These studies have provoked considerable interest in the possibility of developing biomarkers for PTSD and their ability to predict the long-term emergence of a disorder (18).

These enduring effects of war have also been shown to transmit inter-generationally in the offspring of Holocaust survivors, through the maternal transmission of increased glucorticoid receptor sensitivity, a risk factor for PTSD (19). Hence, war impacts on the next generation neurobiologically, as well as through the impaired attachment behaviour of PTSD sufferers (19).

## CONCLUSIONS

Documenting the psychological costs of war is important, as it powerfully argues for the need to globally improve the treatment services for veterans and effected civilians alike. The substantial research effort into studying veteran populations has also contributed broadly to the understanding and acceptance of the effects of traumatic stress in society and focus attention on the need for improved services. However, despite advances in evidence-based care, substantial morbidity remains, highlighting the need for innovation in treatments and rehabilitation.

Political leaders need to remember these long-term indelible consequences when they consider declaring war. The ultimate method of prevention is to stop war, an aspiration that is tragically at odds with human nature.

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